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FH		EI	Patent Abstracts of Japa	n, Publication N	io. 092272	98A, published	09/02/1997,	1 page			
FH.		E2	Patent Abstracts of Japan	n, Publication N	io. 100225	68A, published	01/23/1998,	1 page			
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F.H.	FI	Patent Abstracts of Japan, Publication No. 111358.	32A, published 05/21/1999, 1 page	MAYSEIVE
Q	F2	Patent Abstracts of Japan, Publication No. 111450	57A, published 05/28/1999, 1 page	TC 17002 TC 17002 TC 17002
	ស	Patent Abstracts of Japan, Publication No. 111455	16A, published 05/28/1999, 1 page	JUNILIVED
	F4	Patent Abstracts of Japan, Publication No. 113460.	32A, published 12/14/1999, 1 page	1700
·	FS	Patent Abstracts of Japan, Publication No. 1134603	35A, published 12/14/1999, 1 page	
	F6	Patent Abstracts of Japan, Publication No. 200009	1252A, published 03/31/2000, 1 page	
	F7	Patent Abstracts of Japan, Publication No. 200009	1253A, published 03/31/2000, 1 page	
	F8	Patent Abstracts of Japan, Publication No. 200035	7820A, published 12/26/2000, 1 page	
	F9	Patent Abstract of Japanese Patent No. JP4297023 1 page	corresponding to European Patent No	o. EP0497350, published 08/05/1992,
	110	"InGaN/GaN/AIGaN-based laser diodes with modulaterally overgrown GaN substrate", Shuji Nakami Appl. Phys. Lett. 72 (2), 12 January 1988 1998 American Insitute of Physics, 3 pages	ulation-doped strained-layer superlatt ura et al.	ices grown on an epitaxially
	Pis	"Influence of sapphire nitridation on properties of S. Keller et al. Appl. Phys. Lett. 68 (11), 11 March 1996 1996 American Institute of Physics, 3 pages	gallium nitride grown by metalorgani	c chemical vapor deposition",
ĔΗ ·	F12	"The effect of the SI/N treatment of a nitridated sal vapor phase epitaxy", S. Haffouz et al. Applied Physics Letters, Volume 73, Number 9, 31	•	GaN in low-pressure metalorganic
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:		"Influence of in situ sapphire surface preparation s P. Vennegues et al. N.H. Elsevier Journal of Crystal Growth 187 (1998	and carrier gas on the growth mode of	f GaN in MOVPE"	0							
	"Fabrication and Characterization of Low Defect Density GaN Using Facet Controlled Epitaxial Lateral Overgrowth (FACELO)" K. Hiramatsu et al. The Tenth International Conference on Metalorganic Vapor Phase Epitaxy June 5-9, 2000 Hokkaido University Conference Hall, Sapporo, Japan (pages 289-300) (5 pages) "Preparation of conductive ZnO:AI films by a facing target system with a strong magnetic field"											
		"Preparation of conductive ZnO:Al films by a facing	ng target system with a strong magnet	tic fleld''								
	Kikuo Tominaga et al. Thin Solid Films 253 (1994) pages 9-13 Elsevier Science S.A. (5 pages)											
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Filt		4	,985,113	01/15/1991	Fujimot	to et al.	156	643	03/07/19	/U	
A	A2	5	5,874,747	02/23/1999	Redwin	g et al.	257	77	02/05/19	96	
1	A3	6	5,103,604	08/15/2000	Bruno e	t al.	438	584	02/10/19	97	
\Box	A4	6	i,172,382 B1	01/09/2001	Nagaha	ma et al.	257	94	01/09/19	98	
	AS	6	5,191,436 B1	02/20/2001	Shibata	et al.	257	91	03/12/19	96	
	A6	6	5,355,945 B1	03/12/2002	Kadota	et al.	257	82	06/24/19	99 .	
	A7	6	5,429,102 B1	08/06/2002	Tsai et s	al.	438	508	02/03/20	00	
	A8	6	5,455,337 B1	09/24/2002	Sverdlo	v	438	22	06/27/20	01	
·	A9	6	,465,808 B2	10/15/2002	Lin		257	81	01/11/20	01	
V	Al	2	002/0036286 A1	03/28/2002	Ho et al	•	257	11	05/15/20	00	
FH	A1	2	002/0042159 A1	04/11/2002	Chiyo e	t al.	438	46	10/10/20	01	
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	AZ	9-1	7975	01/17/1997	Japan		HOIL	27/108		1
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